AMENDMENTS TO THE CLAIMS:

1. (Original) A speech recognition device, comprising:

an I/O device for accepting a voice stream;

a frequency domain converter communicating with said I/O device, said frequency domain converter converting said voice stream from a time domain to a frequency domain and generating a plurality of frequency domain outputs;

a frequency domain output storage communicating with said frequency domain converter, said frequency domain output storage comprising at least two frequency spectrum frame storages for storing at least a current frequency spectrum frame and a previous frequency spectrum frame, with a frequency spectrum frame storage of said at least two frequency spectrum frame storages comprising a plurality of frequency bins storing said plurality of frequency domain outputs;

a processor communicating with said plurality of frequency bins;

a memory communicating with said processor;

a frequency spectrum difference storage in said memory, with said frequency spectrum difference storage storing one or more frequency spectrum differences calculated as a difference between said current frequency spectrum frame and said previous frequency spectrum frame;

at least one feature storage in said memory for storing at least one feature extracted from said voice stream;

at least one transneme table in said memory, with said at least one transneme table including a plurality of transneme table entries and with a transneme table entry of said plurality of transneme table entries mapping a predetermined frequency spectrum difference to at least one predetermined transneme of a predetermined verbal language;

at least one mappings storage in said memory, with said at least one mappings storage storing one or more found transnemes;

at least one transneme-to-vocabulary database in said memory, with said at least one transneme-to-vocabulary database mapping a set of one or more found transnemes to at least one speech unit of said predetermined verbal language; and

at least one voice stream representation storage in said memory, with said at least one voice stream representation storage storing a voice stream representation created from said one or more found transnemes;

wherein said speech recognition device calculates a frequency spectrum difference between a current frequency spectrum frame and a previous frequency spectrum frame, maps said frequency spectrum difference to a transneme table, and converts said frequency spectrum difference to a transneme if said frequency spectrum difference is greater than a predetermined difference threshold, and creates a digital voice stream representation of said voice stream from one or more transnemes thus produced.

2. (Original) The speech recognition device of claim 1, wherein said voice stream is accepted as a digital voice stream.

3. (Original) The speech recognition device of claim 1, wherein said voice stream is compressed.

4. (Original) The speech recognition device of claim 1, wherein said I/O device comprises a microphone.

5. (Original) The speech recognition device of claim 1, wherein said I/O device comprises a wireless receiver.

6. (Original) The speech recognition device of claim 1, wherein said I/O device comprises a digital network interface.

7. (Original) The speech recognition device of claim 1, wherein said I/O device comprises an analog network interface.

8. (Original) The speech recognition device of claim 1, wherein said frequency domain converter is a Fourier transform device.

9. (Original) The speech recognition device of claim 1, wherein said frequency domain converter is a filter bank comprising a plurality of predetermined filters.

10. (Original) The speech recognition device of claim 1, wherein said frequency domain output storage is in said memory.

11. (Original) The speech recognition device of claim 1, wherein said memory further comprises a feature storage and said processor communicates with said frequency domain output storage and extracts at least one feature from said voice stream in a frequency domain and stores said at least one feature in said feature storage.

12. (Original) The speech recognition device of claim 1, wherein said memory further comprises a feature storage and said processor communicates with said I/O device and extracts at least one feature from said voice stream in a time domain and stores said at least one feature in said feature storage.

13. (Original) The speech recognition device of claim 1, wherein said frequency domain converter, said frequency domain output storage, said processor, and said memory are included on a digital signal processing (DSP) chip.

14. (Original) The speech recognition device of claim 1, wherein said digital voice stream representation comprises a series of symbols.

15. (Original) The speech recognition device of claim 1, wherein said digital voice stream representation comprises a series of text symbols.

16. (Original) The speech recognition device of claim 1, wherein said speech recognition device converts and compresses said voice stream into a compressed digital voice stream representation comprising a series of symbols.

17. (Original) The speech recognition device of claim 1, wherein said speech recognition device converts and compresses said voice stream into a compressed digital voice stream representation and transmits said compressed digital voice stream representation as a series of symbols.

18. (Original) The speech recognition device of claim 1, wherein said speech recognition device converts and compresses said voice stream into a compressed digital voice stream representation and stores said compressed digital voice stream representation as a series of symbols.

19. (Original) A method for performing speech recognition on a voice stream, comprising the steps of:

determining one or more candidate transnemes in said voice stream;

mapping said one or more candidate transnemes to a transneme table to convert said one or more candidate transnemes to one or more found transnemes; and

mapping said one or more found transnemes to a transneme-to-vocabulary database to convert said one or more found transnemes to one or more speech units.

20. (Original) The method of claim 19, wherein said one or more speech units are combined to create a digital voice stream representation of said voice stream.

21. (Original) The method of claim 19, wherein said one or more speech units are combined to create a digital voice stream representation of said voice stream, with said digital voice stream representation comprising a series of symbols.

22. (Original) The method of claim 19, wherein said one or more speech units are combined to create a digital voice stream representation of said voice stream, with said digital voice stream representation comprising a series of text symbols.

23. (Original) The method of claim 19, with said determining step further comprising comparing at least two frequency spectrum frames in a frequency domain in order to determine said one or more candidate transnemes.

24. (Original) The method of claim 19, wherein said voice stream is compressed by said method into a compressed digital voice stream representation comprising a series of symbols.

25. (Original) The method of claim 19, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of transmitting said compressed digital voice stream representation as a series of symbols.

26. (Original) The method of claim 19, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of storing said compressed digital voice stream representation as a series of symbols.

27. (Original) The method of claim 19, wherein a voice stream in a first verbal language is converted into a voice stream representation in a second language.

28. (Original) A method for performing speech recognition on a voice stream, comprising the steps of:

calculating a frequency spectrum difference between a current frequency spectrum frame and a previous frequency spectrum frame, with said current frequency spectrum frame and said previous frequency spectrum frame being in a frequency domain and being separated by a predetermined time interval; and

mapping said frequency spectrum difference to a transneme table to convert said frequency spectrum difference to at least one transneme if said frequency spectrum difference is greater than a predetermined difference threshold;

wherein a digital voice stream representation of said voice stream is created from one or more transnemes thus produced.

29. (Original) The method of claim 28, further including the steps of:

saving tonality level changes of said voice stream; and

using said tonality level changes to add punctuation to said voice stream representation.

30. (Original) The method of claim 28, wherein at least one feature is extracted from said voice stream in a time domain.

31. (Original) The method of claim 28, wherein at least one feature is mathematically extracted from said voice stream in a frequency domain.

32. (Original) The method of claim 28, wherein at least one feature is mathematically extracted from said voice stream in a frequency domain, and wherein said voice stream is a compressed voice stream already in said frequency domain.

33. (Original) The method of claim 28, further comprising the steps of:

performing a frequency domain transformation on said voice stream upon a predetermined time interval to create said current frequency spectrum frame;

storing said current frequency spectrum frame in a plurality of frequency bins; and

amplitude shifting and frequency shifting said current frequency spectrum frame based on a comparison of a current base frequency of said current frequency spectrum frame to a previous base frequency of a previous frequency spectrum frame.

34. (Original) The method of claim 28, wherein said predetermined time interval is less than a phoneme in length.

35. (Original) The method of claim 28, wherein said predetermined time interval is about ten milliseconds.

36. (Original) The method of claim 28, wherein said predetermined difference threshold is about 5% of average amplitude of a base frequency bin over a window of less than 100 milliseconds.

37. (Original) The method of claim 28, further comprising the steps of:

accumulating a predetermined number of transnemes;

performing a lookup of said predetermined number of transnemes against a transneme-to-vocabulary database; and

matching at least one transneme in said predetermined number of transnemes to at least one speech unit in said transneme-to-vocabulary database.

38. (Original) The method of claim 37 wherein about ten to about twenty transnemes are accumulated in said predetermined number of transnemes for performing said lookup against said transneme-to-vocabulary database.

39. (Original) The method of claim 37, with the step of performing a lookup against a transneme-to-vocabulary database further comprising performing a free-text-search lookup of said predetermined number of transnemes against said transneme-to-vocabulary database using inverted-index techniques in order to find one or more best-fit mappings of a segment of transnemes in said predetermined number of transnemes to at least one speech unit in said transneme-to-vocabulary database.

40. (Original) The method of claim 28, wherein said digital voice stream representation comprises a series of symbols.

41. (Original) The method of claim 28, wherein said digital voice stream representation comprises a series of text symbols.

42. (Original) The method of claim 28, wherein said voice stream is compressed into a compressed digital voice stream representation comprising a series of symbols.

43. (Original) The method of claim 28, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of transmitting said compressed digital voice stream representation as a series of symbols.

44. (Original) The method of claim 28, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of storing said compressed digital voice stream representation as a series of symbols.

45. (Original) The method of claim 28, wherein a voice stream in a first verbal language is converted into a voice stream representation in a second language.

46. (Original) A method for performing speech recognition on a voice stream, comprising the steps of:

performing a frequency domain transformation on said voice stream upon a predetermined time interval to create a current frequency spectrum frame;

normalizing said current frequency spectrum frame;

calculating a frequency spectrum difference between said current frequency spectrum frame and a previous frequency spectrum frame;

mapping said frequency spectrum difference to a transneme table to convert said frequency spectrum difference to at least one found transneme if said frequency spectrum difference is greater than a predetermined difference threshold; and

creating a digital voice stream representation of said voice stream from one or more found transnemes thus produced.

47. (Original) The method of claim 46, further including the steps of:

saving tonality level changes of said voice stream; and

using said tonality level changes to add punctuation to said voice stream representation.

48. (Original) The method of claim 46, wherein at least one feature is extracted from said voice stream in a time domain.

49. (Original) The method of claim 46, wherein at least one feature is mathematically extracted from said voice stream in a frequency domain.

50. (Original) The method of claim 46, wherein at least one feature is mathematically extracted from said voice stream in a frequency domain, and wherein said voice stream is a compressed voice stream already in said frequency domain.

51. (Original) The method of claim 46, with said step of performing a frequency domain transformation comprising performing time-overlapping frequency domain transformations.

52. (Original) The method of claim 46, with said step of performing a frequency domain transformation comprising performing a Fourier transformation.

53. (Original) The method of claim 46, with said step of performing a frequency domain transformation comprising performing time-overlapping frequency domain transformations of a predetermined transformation window about every 5 milliseconds.

54. (Original) The method of claim 46, with said step of performing a frequency domain transformation comprising performing time-overlapping frequency domain transformations of an about 10 millisecond transformation window about every 5 milliseconds.

55. (Original) The method of claim 46, further comprising the step of storing said current frequency spectrum frame in a plurality of current frequency bins.

56. (Original) The method of claim 46, with said step of normalizing comprising normalizing a base frequency of said current frequency spectrum frame to a base frequency of said previous frequency spectrum frame.

57. (Original) The method of claim 46, with said step of normalizing comprising frequency shifting said current frequency spectrum frame using an extracted pitch feature.

58. (Original) The method of claim 46, with said step of normalizing comprising amplitude shifting said current frequency spectrum frame using an extracted volume feature.

59. (Original) The method of claim 46, with said step of normalizing comprising amplitude shifting and frequency shifting said current frequency spectrum frame based on a comparison of a current base frequency of said current frequency spectrum frame to a previous base frequency of said previous frequency spectrum frame.

60. (Original) The method of claim 46, further comprising the step of storing said current frequency spectrum frame in a plurality of current frequency bins and with said step of calculating said frequency spectrum difference comprising calculating a plurality of difference values between a plurality of current frequency spectrum frame bin values in said plurality of current frequency bins and a plurality of previous frequency spectrum frame bin values.

61. (Original) The method of claim 46, wherein said predetermined time interval is less than a phoneme in length.

62. (Original) The method of claim 46, wherein said predetermined time interval is about ten milliseconds.

63. (Original) The method of claim 46, wherein said predetermined threshold is about 5% of average amplitude of a base frequency bin over a window of less than 100 milliseconds.

64. (Original) The method of claim 46, further comprising the steps of:

accumulating a predetermined number of transnemes;

performing a lookup of said predetermined number of transnemes against a transneme-to-vocabulary database; and

matching at least one transneme in said predetermined number of transnemes to at least one speech unit in said transneme-to-vocabulary database.

65. (Original) The method of claim 64, wherein about ten to about twenty transnemes are accumulated in said predetermined number of transnemes for performing said lookup against said transneme-to-vocabulary database.

66. (Original) The method of claim 64 with the step of performing a lookup against a transneme-to-vocabulary database further comprising performing a free-text-search lookup of said predetermined number of transnemes against said transneme-to-vocabulary database using inverted-index techniques in order to find one or more best-fit mappings of a segment of transnemes in said predetermined number of transnemes to at least one speech unit in said transneme-to-vocabulary database.

67. (Original) The method of claim 46, wherein said digital voice stream representation comprises a series of symbols.

68. (Original) The method of claim 46, wherein said digital voice stream representation comprises a series of text symbols.

69. (Original) The method of claim 46, wherein said voice stream is compressed into a compressed digital voice stream representation comprising a series of symbols.

70. (Original) The method of claim 46, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of transmitting said compressed digital voice stream representation as a series of symbols.

71. (Original) The method of claim 46, wherein said voice stream is compressed by said method into a compressed digital voice stream representation and wherein said method further comprises a step of storing said compressed digital voice stream representation as a series of symbols.

72. (Original) The method of claim 46, wherein a voice stream in a first verbal language is converted into a voice stream representation in a second language.

73. (Previously presented) A speech recognition device, comprising:

an input transducer that converts audible speech into a voice stream signal;

a transneme database;

a transneme-to-vocabulary database; and

at least one processor that extracts one or more candidate transnemes from said voice stream signal, maps said one or more candidate transnemes to said transneme database to convert said one or more candidate transnemes to one or more found transnemes, and maps said one or more found transnemes to said transneme-to-vocabulary database to convert said one or more found transnemes to one or more speech units;

whereby a continuous voice stream signal obtained from continuous audible speech is converted into a sequence of speech units that together constitute at least one word.

74. (Currently amended) A method for performing speech recognition on a voice stream, comprising the steps of extracting transnemes from a signal representing said voice stream, and converting said transnemes into a sequence of speech units that together constitute at least one word.